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of metal may be deposited onto the polymeric layer by a high-energy deposition process such as sputtering, and the leads may be additively plated onto the initial layer. A metal layer may be laminated to the polymeric layer using conventional adhesives (not shown) and the metal layer may be subtractively etched to form the leads. The metal in leads 24 may be essentially any electrically conductive metal usable as an electrical lead. For example, copper, gold and alloys containing these metals may be employed. Moreover, leads 24 may include plural layers of different metals. For example, leads 24 formed from copper or copper alloy and may be covered by a thin layer of gold. The particular leads illustrated in Figs. 1 and 2 incorporate spots 36 of a bonding material at the second end of each lead. Bonding material 36 is adapted to bond the second ends of the leads to contacts on a microelectronic component as discussed below. The dimensions and configurations of the leads may be generally as described in the aforementioned '964 patent.

Please also amend paragraph **[0050]** as follows:

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[0050] The particular component discussed above with reference to Figs. 1-7 is used in a process as described in the aforementioned '964 patent. As discussed in greater detail therein, the connection component is juxtaposed with a microelectronic chip, wafer or other microelectronic element 50 (Fig. 8), so that the releasably connected second ends 30 of the leads are aligned with contacts 52 on the microelectronic element. Heat and pressure are applied to bond the second ends 30 of the leads to the contacts 52 using the bonding material 36 carried by the leads. During this process, the second ends of the leads remain attached to the polymeric layer by the connecting elements 46. After the second ends have been bonded to the contacts, the polymeric layer 22 and microelectronic element 50 are moved away from one another through a predetermined displacement so as to deform the elongated sections 32 of the leads to a vertically extensive disposition. As the microelectronic element and dielectric layer move away from one another, the second ends of the leads move away from the surface 26'. The connecting elements 46 either break or pull away from the surface of the metal leads. However, because the strength of each connecting element is well controlled, the

second ends of the leads will release reliably from the polymeric layer. As further discussed in the '964 patent, a compliant material such as a gel or elastomer may be provided around the deformed leads, as by introducing a liquid encapsulant between the polymeric layer and the dielectric element and curing the liquid encapsulant. The vertically extensive, bent leads provide flexible interconnections between the chip contacts 52 and the electrical conductors 34 on the polymeric element.

(Please also amend paragraph **[0051]** as follows:)

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[0051] In a process according to a further embodiment of the invention, leads with elongated regions 132 and attachment regions or end regions 130 are provided on a surface 126 of a polymeric layer 122. A mask 140 covers a first region of the dielectric surface and covers those portions 133 of the leads exposed in this region. Mask 140 itself is susceptible to attack by the gaseous etchant. The etching step is performed as discussed above. In those regions of the surface which are not covered by mask 140, surface 126 is attacked, leaving elongated portions 132 detached from the newly etched surface 126', and leaving end regions or attachment regions 130 connected to the newly etched surface 126' by polymeric connecting elements 146 similar to those discussed above. In the region of the polymeric layer initially covered by the mask, surface 126 remains substantially unetched and hence lead portions 133 remain securely anchored to the unetched surface of layer 122. The mask is removed by the etching process itself; the etching step is terminated shortly after the mask is eroded away by the etchant. Alternatively, mask 140 may be resistant to the etchant, and may be physically peeled away after the etching step. For example, mask 140 may include a metallic layer such as a layer of copper together with an adhesive.

Please also amend paragraph **[0053]** as follows:

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[0053] In a process according to a further embodiment of the invention, the leads 224 (Fig. 12) are of substantially uniform width. Here again, a first region of the surface 226 and the corresponding anchor portions 233 of the leads are covered by a mask 240. After etching, the exposed portions of leads 224 are connected to the etched polymeric surface 226' by polymeric connection elements 246 in the form of strips narrower than the leads. The mask-

covered anchor regions 233 remain attached to the original surface 226 over substantially the full widths of the leads. Thus, the anchor regions at the first ends of the leads remain permanently attached whereas the exposed portions 230 at the second ends of the leads are releasably attached to the polymer layer by the narrow connecting elements 246. In a further step, a slot 255 is cut through the polymer layer 222 beneath the leads, between the anchor regions 233 and the ends of the exposed or releasably attached regions 230. Such a slot may be formed , for example, by a further etching step from the opposite surface of the polymer

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layer, or by laser ablation of the polymer layer. Processes according to this aspect of the invention may be used to make connection components for use in processes as illustrated in the aforementioned 94/03036 International Publication. As described in greater detail in that publication, the connection component can be used in a process wherein a bonding tool is advanced through the slot 255 and engaged with each lead so as to break the lead away from the dielectric layer. During the process, the polymeric connecting element 246 associated with each lead is broken as that lead is engaged by the bonding tool and pushed away from the dielectric supporting layer.

Please also amend paragraph **[0060]** as follows:

[0060] The metallic and dielectric jackets discussed above can be applied to leads having many different configurations. For example, one form of connection component depicted in International Publication WO 94/03036 includes a dielectric support 422 having a gap 425 therein and plurality of elongated leads 424 projecting from the support across the gap. Each lead has a first end 428 extending along the top or first surface of the dielectric support 422

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and permanently attached to the dielectric support on one side of the gap. Each lead also has a second end 430 releasably connected to a metallic bus 431 by a frangible section 433, and hence releasably attached to the dielectric support 422. Typical leads of this type have cross-sectional dimensions (width and thickness transverse to the direction of elongation of the leads) 50 microns wide or less, and commonly about 30 microns wide or less. As discussed in greater detail in the '036 publication, these leads can be connected to a semiconductor chip or microelectronic element by engaging each lead 424 with a bonding tool and forcing the

lead downwardly, into gap 425 so as to break the frangible section 433 and detach the second end of the lead. The lead is thus bent downwardly and bonded to a contact (not shown) on the microelectronic element. A dielectric layer 441 and a conductive layer or jacket 457 similar to those discussed above with reference to Figs. 16-19 may be applied around part of each lead 424. The metallic jackets 457 of the various leads may be contiguous with a metallic layer 459 extending downwardly along the edge of the gap and joining with a ground plane 423 on the bottom surface of the dielectric element. These leads may be formed by masking and deposition processes similar to those discussed above.

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